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REMARKS

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

Status of Claims

Claims 1-35 are pending in the application.

Claims 1-35 have been rejected.

Claims 1, 11, 17-35 have been amended. Applicants respectfully assert that the amendments to the claims add no new matter.

Remarks to the Specification

The Examiner has objected to the specification for the absence of a brief summary of the invention. It is respectfully submitted that Applicants understand a brief summary to be optional, and in the case of a short application such as the present one, a brief summary may be found in the whole of the specification.

Claim Objections

In the Office Action, the Examiner objected to claims 17, 19-21, 23, 26-28, 30, 33 and 35 under 37 CFR 1.75(c), as being of improper dependant form for failing to further limit the subject matter for a previous claim. The claims have been amended to correct typographical errors in the dependencies and cure these informalities. Accordingly, Applicants request withdrawal of the objection.

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In addition in the Office Action, the Examiner objected to claims 1-10 and 32-35 as per claims 1 and 32, "...between an access point and the first station and the access point and the second station" is not clear. Claims 1 and 32 have been amended in order to cure these informalities. Accordingly, Applicants request withdrawal of the objection.

It is respectfully submitted that amendments made to these claims do not narrow the scope of the claims in any way.

CLAIM REJECTIONS

35 U.S.C. § 112 Rejections

In the Office Action, the Examiner rejected claims 17, 19-21, 23, 26-28, 30, 33 and 35 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As pointed out above, these claims have been amended to correct informalities. It is respectfully submitted that these claims are now proper; Applicants request that the rejections be withdrawn.

35 U.S.C. § 102 Rejections

In the Office Action, the Examiner rejected claims 1, 11, 25 and 32 under 35 U.S.C. § 102(e), as being anticipated by Whelan et al (U.S. Patent No. 6,965,674). Applicants respectfully traverse this rejection in view of the remarks that follow.

The abstract of Whelan discloses:

A system and method are disclosed that overcome deficiencies of prior art IEEE 802.11 WEP key management schemes. Preferred embodiments of the present system and method update WEP keys and rotate transmission key indices in a synchronized manner and on a frequent basis making it impractical for a hacker to gather

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sufficient network traffic using any one WEP key to decrypt that key and without disrupting communications. . . . The disclosed system and method may be used to facilitate secure communications between one or more access points and one or more mobile units and/or groups of two or more mobile units engaging in peer-to-peer associations.

In particular, Whelan teaches using pre-shared keys, wherein each station has a (static) pre-shared key, and pair-wise keys are derived by the stations based on the pre-shared key.

The invention updates the static key set and rotates the transmission key index in a synchronized manner and on a frequent basis making it impractical for a hacker to gather sufficient network traffic using any one WEP key to decrypt that key. (col. 3, lines 53-57)

However, Whelan does not teach establishing a secure direct link if the stations do not have a pre-shared key. In such situations, no direct link may be established.

In contrast to Whelan, the amended claims of the present application recite "sending secured direct link protocol messages that include pair-wise keys to the first and second stations according to a selected encryption method." Accordingly, the pending claims permit establishing a secure direct link between stations in a WLAN by an access point even when the stations do not have a common pre-shared key.

In addition, Whelan only discloses use of one particular encryption protocol, namely, WEP protocol. Whelan does not teach or disclose that the access point sends "secured direct link protocol messages that include pair-wise keys to the first and second stations according to a selected encryption method" as recited in claim 1.

Accordingly, claims 1, 11, 25 and 32, and the claims that depend therefrom, are neither anticipated nor obvious in light of Whelan.

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35 U.S.C. § 103 Rejections

In the Office Action, the Examiner rejected claim 18 under 35 U.S.C. § 103(a), as being unpatentable over Whelan et al. (U.S. Patent No. 6,965,674). For at least the reasons stated above, claim 18 is allowable over the art of record.

In addition, in the Office Action, the Examiner rejected claims 2-10, 12-17, 19-24, 26-31 and 33-35 under 35 U.S.C. § 103(a), as being unpatentable over Whelan et al. (U.S. Patent No. 6,965,674) as applied above in claim 1, further in view of Wentink et al. (U.S. Pub No. 2005/0135304).

The Wentink reference discloses:

exemplary techniques for initiating a direct wireless link between two wireless devices. The system and method include transmitting, from a first wireless device, a first frame having a destination media access control (MAC) address of the second wireless device, wherein the first frame includes direct link information encapsulated at the logical link control level; receiving, at the first wireless device, a second frame from a second wireless device, the second frame having a destination MAC address and being intended for the first wireless device, wherein the second frame includes direct link information encapsulated at the logical link control level; and establishing a direct wireless link between the first wireless device and the second wireless device when a third frame is transmitted from the first wireless device, the third frame having a destination media access control (MAC) address of the second wireless device, wherein the third frame includes direct link information encapsulated at the logical link control level. (Abstract)

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Wentink does not teach or disclose establishing by an access point. With regard to involvement of an access point, Wentink discloses that the first and second stations may communicate "directly" via an access point:

[0084] If no ACK frame received, a direct link may still be set up even though direct communications may not be possible. The direct link communications may be relayed by the access point but it may still be possible to use a subset of the extra capabilities in this context. To illustrate, two stations may be in the same BSS but outside of direct link range. In this case, they typically need the access point to relay their traffic because direct transmission is not possible. However, it may be useful to setup an "indirect" direct link in this case by allowing the stations to use a subset of the performance enhancements provided by a direct link. These performance enhancements may include those features which are transparently forwarded by the access point, such as compression, concatenation, encryption, etc. (emphasis added)

Wentink establishes secure direct link between mobile stations without active intervention of the access point. Only where the stations cannot communicate directly, the access point may act as a relay to relay messages back and forth between the mobile stations. However, the access point does not establish a secured direct link by sending pair-wise keys to the stations. In fact, Wentink teaches away from doing so – the point of Wentink is to establish a secure direct link without the intervention of the access point.

Accordingly, Wentink is not relevant to the present claims because it does not relate to a method of "establishing a secured direct link by an access point" as recited in claim 1, and therefore, in claims 2-10.

Likewise, claims 11, 18 and 24 recite "a controller to establish a secured direct link between a first station and a second station of wireless local area network by exchanging two or more secured direct link protocol messages with the first station and the second station, and sending secured direct link protocol messages that include pair-wise keys to the first and second stations according to a selected encryption method." The access point in Wentink

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does not establish a secured direct link, etc. as recited by the controllers in claims 11 or 18. Nor would it have been obvious to do so, as it would defeat the purpose of the Wentink reference to establish the secure direct link using the access point, as recited in the pending claims. Accordingly, claims 12-17, 19-24, and 26-31, which depend respectively from claims 11, 18 and 25, are allowable over the art of record.

Claim 32 recites an article comprising a storage medium, having stored thereon instructions "that when executed by an access point in a wireless local area network (WLAN)" result in the recited actions. Accordingly, as discussed above, the recited actions are not performed based on instructions performed by an access point. Accordingly, claims 33-35 are allowable over the art of record.

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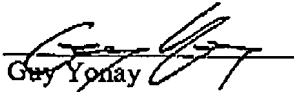
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In view of the foregoing amendments and remarks, the pending claims are deemed to be allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Please charge any fees associated with this paper to deposit account No. 50-3355.

Respectfully submitted,


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